

ABSTRACT

STABLE MICROBUBBLE SUSPENSIONS AS ENHANCEMENT AGENTS FOR

5 ULTRASOUND ECHOGRAPHY AND DRY FORMULATIONS THEREOF

Disclosed are injectable suspensions of gas filled microbubbles in an aqueous carrier liquid usable as contrast agents in ultrasonic echography. The suspensions comprise amphipathic compounds of which at least one may be a laminarized phospholipid as 10 a stabiliser of the microbubbles against collapse with time and pressure. The concentration of phospholipids in the carrier liquid is below 0.01% wt but is at least equal to or above that at which phospholipid molecules are present solely at the gas microbubble-liquid interface. Also disclosed are methods of preparation of the stable suspensions of gas filled microbubbles, as well as dry formulations which, upon 15 reconstitution in an aqueous carrier liquid, will form the injectable suspensions of gas filled microbubbles of the invention and methods of making and using the same. The preferred dry formulations are stable when stored over time and at temperatures above ambient temperature and further comprise a lipid acid preserving agent additive.